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ABSTRACT

The study was designed to determine whether cloze procedure could be used in adult literacy programs for students reading at or above the fourth grade level by investigating the procedure's: acceptability for the students, utility in matching students to reading material, and substitutability for standardized tests. Eighty-five Rhode Island students, 35 in advanced Adult Basic Education (ABE) classes and 50 in high school equivalency classes, completed cloze passages taken from three sources. Deletions were at the 1:5 ratio. Data analysis was done on exact replacements. Cloze procedure was found acceptable as fewer than 25% of the students rated it uninteresting and only 7% of the 122 items were not attempted by at least 75% of the students. It appears to be useful in matching students to instructional materials as more advanced groups of students show higher mean scores than less advanced groups; and means scored on passages of similar difficulty levels were significantly correlated. The data proved insufficient to answer the question on substitutability for standardized tests. The paper develops some suggestions for practical applications of cloze procedure in adult literacy programs. A 12-item bibliography is included. (Author/MS)

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THE USE OF CLOZE PROCEDURE IN ADULT LITERACY PROGRAMS

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Elimination of illiteracy has high priority in adult education programs although recent data seems to indicate that little, if any, progress is occuring in the U.S. Both the University of Texas Adult Performance Level Study (1) and the National Assessment of Educational Progress (2) clearly indicate that, in spite of increasing percentages of people completing eight and twelve years of formal schooling, a significant number of adults are unable to complete test items designed to measure their literacy in terms of functional skills, such as reading classified ads.

Instruments designed for both of these studies are criterion-referenced, showing a trend away from defining literacy either by years of schooling completed or ability to score at a predetermined criterion level on a norm-referenced test. However, years of schooling continues to be the current basis for assessing need for adult fundamental education. Using this criterion, an appallingly small percentage of adults eligible for free classes are actually participating. A 1974 report from Rhode Island (3) estimated that only two to three percent of those eligible enrolled. This report concluded that enrollment would not increase until potential students perceive the program as teaching immediately relevant skills through materials which meet both their interest and ego needs.

STATEMENT OF THE PROBLEM

Many ABE teachers have attempted to meet the need for student relevance by use of class or program designed materials or by bringing current periodicals and newspapers into the classroom. A number of publishers and special demonstration projects have also developed adult-oriented materials. This practice has presented new problems in matching students to reading material of appropriate reading difficulty level.

Cloze procedure has been suggested as an appropriate testing technique for ABE because it assesses both the readability of material and reading ability of students. Cloze creates a test passage through systematic mutliation of narrative passages by deletion of words according to a pre-established schedule. The reader responds by replacing the deleted words. Particular strengths of cloze are parsimony of resources needed to design test passages and sensitivity to individual differences in reading ability and background information.

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The problems to be researched were:

1. Is cloze procedure acceptable for this group?
2. Can cloze procedure be used to match students to instructional materials?
3. Can it be substituted for standardized tests?

METHOD

Review of the extensive research on use of cloze with children led to selection of Bormuth's paradigm of a 1:5 deletion ratio and exact replacement scoring with criterion levels of 50% or higher indicating independent reading level, 35 - 49% indicating instructional reading level and less than 35% completion indicating lack of information gain.

Classes in which testing was to take place were selected so that the resulting data would represent what Kerlinger (4) terms a "purposeful" sample. Classes represented two levels of students: Advanced ABE (4th through 8th grade) with a total of 35 respondents, and high school equivalency review (HSE) with a total of 50 respondents. Classes met downtown, inner city residential, and suburban areas; daytime and nighttime; and in a penetentiary. All students attending on the day the teacher administered the test were included in the study.

Passages were selected from three sources: some were replications of passages used in a study done by the Madison, Wisconsin, public schools. Some were constructed from randomly selected passages in commercial publications for advanced ABE or HSE classes. Each test booklet consisted of passages at the appropriate difficulty level, student instructions, a sample passage, and a questionnaire. At all except one site which requested taped instructions, the teachers read the instructions. The easiest passage was always placed first; other passages were mixed in placement to minimize copying and avoid unintended bias due to placement.

Data was coded by a graduate student and analyzed by computer. Two variables were created for analysis: reading ability for each student which was analogous to a weighted mean score and a group mean on each passage.

Acceptability of cloze was judged from two sources of data: how the student said he felt about the procedure on the questionnaire and his actual performance in attempting to complete deletions.

Utility of cloze as a testing instrument was evaluated by examining its ability to discriminate between levels of student abilities. Correlation coefficients of passage means were computed as were contingency coefficients comparing

the distribution of respondents over the three criterion levels between pairs of passages.

Substitutability for standardized tests could be demonstrated by comparing passage means obtained by school children of a known grade equivalent level with adult scores.

RESULTS

Acceptability of cloze procedure was shown by the students' persistence in responding to cloze items and their positive response to the questionnaire. Percentage of deletions attempted always exceeded 50% on even the most difficult passages. Only nine out of 122 items (7%) were attempted less than 75% of the time. This response rate met the criterion level established by the researcher for acceptability. It was considered especially positive since more than 15% of the sample were incarcerated males who were known to be markedly uncooperative in test situations.

Responses to the question on test interest reached the criterion level of fewer than 25% unfavorable responses.

% of Responders	Rating Chosen
13%	Very boring
7%	Uninteresting
22%	So-so
39%	Interesting
14%	Very interesting
5%	No response
100%	Total (N=85)

Also, more than half of the students found the test satisfactory in length and less than half rated it as of greater than average difficulty level.

Utility in matching students to reading material was examined first by ascertaining whether scores on three over-lapping passages resulted in mean scores for HSE students which were significantly higher than mean scores attained by ABE students. Table 1 shows that the means are significantly different at the .05 level.

TABLE 1

COMPARISON OF MEANS BY LEVELS
ON THREE PASSAGES

Passage	Level 2 Mean	Level 2 S.D.	Level 2 N	Level 1 Mean	Level 1 S.D.	Level 1 N	t. .05*
Weight (1)	.75	.15	50	.67	.22	35	sig.
Spending (2)	.45	.19	41	.38	.21	35	sig.
Stoves (6)	.51	.19	11	.35	.24	35	sig.

*Two-tailed test

In addition, where passages were designed to be of similar difficulty by the publisher, mean scores for the passages were found to have a significant, positive correlation. This tends to support the hypothesis that cloze procedure can be used to match students to instructional materials.

Further data analysis was undertaken to explore relationships. Product-moment correlations of passage means were almost all highly positive except where means were quite different and the number of respondents was small (11). This is an indication that the test passages are all measuring the same thing. However, when three by two matrices (the three readability levels on two passages) were tested for contingency coefficients (C), differences in difficulty levels were established. For ABE students, 13 of the 15 C values were large enough to indicate responding patterns different at the .05 level. For HSE students, six out of 15 comparisons were significantly different.

Substitutability of cloze procedure for standardized tests could not be investigated because of flaws in the data base.

CONCLUSIONS AND IMPLICATIONS

If a variety of adult relevant reading materials are used for instruction, cloze procedure can be utilized as a satisfactory and efficient way to match students to reading material and to group students by reading ability. As a staff development person and evaluation specialist, the researcher takes the liberty of going beyond the research design to make the following suggestions about the use of cloze procedure in adult literacy programs:

1. If one must assign a grade equivalent score, a standardized reading test will appear to be more precise and will be easier to explain.

2. Cloze is not a panacea for unmotivated students.

3. Although Bormuth's criterion levels appear acceptable for adults, examination of actual test passages reveals that there are exceptions. Non-native speakers of English might be more acceptably tested by a multiple choice format for completing deletions, with a concommitant change in criterion levels.

4. Cloze scores cannot be used as continuous data because cloze is a criterion-referenced measure. Thus, it yields only three scores: functional illiteracy, instructional reading level, or independent reading level. Therefore, it is not sensitive to small changes and has limitations in evaluating either students or programs.

5. Cloze appears to effectively measure all of the reading variables posited by Fry (5): legibility, word difficulty style difficulty, picture or graph cues, students' familiarity with subject matter, and difficulty of the subject. Most readability forumlae measure only one or two variables, usually word and sentence length. This makes cloze an especially good choice for use with materials such as Learning Activity Packages and those making extensive use of illustrations.

6. An analysis of response patterns (item analysis) may suggest particular problem spots that need to be rewritten.

7. Systematic use of cloze could be used to establish a data bank for grouping materials by readability levels.

8. Cloze is not recommended for use with students reading below approximately fourth grade equivalent level.

One positive finding with a negative implication was that commercial materials were at a consistent difficulty level. About one-third of the ABE students were probably not able to gain information from the readings supposedly at their level. As many as two-thirds of the HSE students may not be able to gain information from the review books from which passages were selected for this study.

Cloze procedure merits further research as both a testing and instructional tool in adult literacy programs.

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